CLAIMS

1. A transmission comprising:

an aluminum housing member having a bore formed therein;

a rotatable member supported on a bearing within the bore; and

wherein said bore includes a layer of thermal spray coating for improved wear resistance so that the bore supports the bearing without a steel sleeve therebetween.

2. The transmission of claim 1, wherein said thermal spray coating comprises a steel alloy, with a coating thickness between approximately 0.1 and 0.5 mm.

3. The transmission of claim 2, wherein said steel alloy comprises 0.1 to 1% weight C, 0 to 14% weight Cr, 0 to 2% weight Mn, 0 to 2% weight Ni, 0 to 1% weight Si, and the balance Fe.

4. The transmission of claim 1, wherein said thermal spray coating comprises a nickel alloy, with a coating thickness between approximately 0.02 and 0.08 mm.

5. The transmission of claim 4, wherein said nickel alloy comprises 15 to 25% weight Cr, 0 to 20% weight Al, 0 to 5% Y, and the balance Ni.

6. The transmission of claim 1, wherein said thermal spray coating comprises a copper alloy, having 7 to 13% weight Al, 0 to 5% weight Fe, 0 to 6% Ni, and the balance Cu.

7. The transmission of claim 1, wherein said thermal spray coating is applied by a two wire arc spray process.

8. The transmission of claim 1, wherein said thermal spray coating is applied by a plasma thermal spray coating process.

9. The transmission of claim 1, wherein said transmission is a continuously variable transmission (CVT), said rotatable member is a rotatable pulley member, and said aluminum housing member comprises a transmission case.

10. The transmission of claim 1, wherein said transmission is a continuously variable transmission (CVT), said rotatable member is a rotatable pulley member, and said aluminum housing member comprises a transmission cover.

11. A continuously variable transmission (CVT) comprising:

an aluminum housing member having a bore formed therein;

a rotatable pulley member supported on a bearing within the bore;

wherein said bore includes a layer of thermal spray coating for improved wear resistance so that the bore supports the bearing without a steel sleeve therebetween; and

wherein said thermal spray coating comprises a steel alloy.

12. The CVT of claim 11, wherein said steel alloy comprises 0.1 to 1% weight C, 0 to 14% weight Cr, 0 to 2% weight Mn, 0 to 2% weight Ni, 0 to 1% weight Si, and the balance Fe.

13. The CVT of claim 11, wherein said thermal spray coating is applied by a two wire arc spray process.

14. The CVT of claim 11, wherein said thermal spray coating is applied by a plasma thermal spray coating process.

15. The CVT of claim 11, wherein said aluminum housing member comprises a transmission case.

16. The CVT of claim 11, wherein said aluminum housing member comprises a transmission cover.

17. A method of manufacturing a continuously variable transmission (CVT) comprising:

casting an aluminum housing member with a bore formed therein;

providing a thermal spray coating on the I.D. surface of the bore for improved wear resistance; and

positioning a bearing directly against the I.D. surface of the bore for supporting a rotatable pulley member without a sleeve positioned between the bearing and the I.D. surface.

18. The method of claim 17, wherein said thermal spray coating is applied by a two wire arc spray process.

19. The method of claim 17, wherein said thermal spray coating is applied by a plasma thermal spray coating process.

20. The method of claim 17, further comprising, prior to said step of providing a thermal spray coating, cleaning, degreasing and grit blasting the I.D. surface of the bore; and

after said step of providing a thermal spray coating, finish machining the I.D. surface of the bore.

21. The method of claim 20, wherein said thermal spray coating is applied by wire arc spray, and said finish machining comprises grinding.

22. The method of claim 20, wherein said thermal spray coating is applied by a plasma spray process, and said finish machining comprises buffering.